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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/578,140	05/24/2000	Dion Horvat	991323	4685

7590 08/18/2005

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EXAMINER

MOORE, IAN N

ART UNIT PAPER NUMBER

2661

DATE MAILED: 08/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.



## **DETAILED ACTION**

### ***Response to Amendment***

1. Claim rejection, under 35 USC § 112 second paragraph on claim 18 is withdrawn since they are being amended accordingly.
2. No claims are elected.
3. Claims restrictions on newly submitted claims 19-30 (Group II) remain restricted, and they are still withdrawn from consideration as being to a non-elected invention.
4. Claim 11 is amended.
5. Claims 1-10,14, and 31-34 are rejected by the same ground of rejections, and claims 11,12 and 14 are rejected by the new grounds of rejection.

### ***Election/Restrictions***

6. Applicant's argument, with traverse on restriction, in the reply filed on 3/9/2005 is acknowledged. The traversal is on the ground(s) that there is no serious burden on the examiner. This is not found persuasive because the restriction Group I is directed to "originally presented invention" which is a multiple access classified in 370/347. Group II is directed to "newly added claims" which is a synchronization classified in 370/350. First, applicant is argued using the class 370/345, yet subclass 370/345 is not being used in either of the group. Second, groups I and II requires two different searches since they are two different inventions, which are mutually exclusive. The evident of two mutually exclusive inventions can clearly be seen by mans of two independent subclasses. By having two different inventions and their associated subclasses

belong to a signal general subclass (i.e. 370/345), does not mean these two inventions are the same. Thus, a serious burden has clearly presented and the restriction is proper.

**The requirement is still deemed proper and is therefore made FINAL.**

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over West , line US005574979A).

**With regard to claim 1**, West makes known a method of TDMA communication in the presence of periodic interference. During data transmission, West detects bursts of interference and proceeds to transmit data so as to avoid the interference by reassigning time-slots (column 61, lines 15-42). West employs two time-slots for communication (transmitting the information) in the presences of interference bursts (interference burst). While communicating in one transmission time (first assigned time slot), communication resumes in a second transmission time (second time slot) after the interference ends (column 62, lines 14-18).

West does not disclose transmitting a redundant copy of the data packet within the second time slot. West, however, discloses, redundant transmission (redundant copy) (column 22, lines 30-33). A person of ordinary skill in the art would have been motivated to transmit a redundant copy of the data packet on the second time slot so as to reduce transport delay (column 22, lines

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30-33). At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art, to which the invention pertains to transmit a redundant copy of the data packet within the second time slot as described in claim 1.

**Regarding claim 2,** West discloses a method of TDMA communication in the presence of periodic interference. West detects (detecting) periodic interference (periodic bursts of the interference) and proceeds to transmit data so as to avoid the interference by reassigning time-slots (column 61, lines 15-42). West utilizes two timeslots for communication in the presences of interference bursts. While communicating in one transmission time (first time slot), communication resumes in a second transmission time (second time slot) after the interference abates (column 62, lines 1418). When West recognizes that the interference is periodic,, data is transmitted only at times when the interference is not expected to be present (column 61, lines 15-42).

West does not disclose transmitting a redundant copy of the data packet on the second time slot. West, however, discloses redundant transmission (redundant copy) (column 22, lines 30-33). A person of ordinary skill in the art would have been motivated to transmit a redundant copy of the data packet on the second time slot so as to reduce transport delay (column 22, lines 30-33). At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to transmit a redundant copy of the data packet on the second time slot as described in claim 2.

**With respect to claim 3,** West presents the use of error rate monitoring to determine whether or not periodic interference is present. Signal strength and packet error rates are monitored (observing) to determine whether or not interference is present. In the event that

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interference is present, the device further determines whether or not the interference is periodic or simply sporadic. To determine (determining) if the interference is periodic, West compares the timing of the increased signal strength and error rates with that of a sync circuit connected to the AC power source. If the errors coincide with the sync waveform, the interference is thought to be periodic (column 62, lines 23-47).

**With respect to claim 4**, West discloses a method to ascertain whether or not the interference is periodic comparing (observing) the timing of the interference with that of the AC power source (AC power source). To determine whether or not the interference is periodic, West compares the timing of the increased signal strength and error rates with that of a sync circuit connected to the AC power source. If the errors coincide with the sync waveform, the interference is thought to be periodic: (Figure 45, column 61, lines 23-33, column 62, 23-47).

**With respect to claim 5**, West employs two thresholds to monitor interference and determine whether or not periodic interference is present. First, the signal strength (first threshold) is compared (determining) to a threshold. In the event that the signal strength is higher than expected, the data packet error rate (second threshold) is compared (determining) to a threshold. In the event that both the received signal strength and data packet error rate exceed their respective thresholds, West proceeds to determine whether or not the interference is periodic (Figure 51. and column 62, lines 22-35).

**With respect to claim 6**, West presents a computer controller that interfaces with the transceiver in either the mobile unit (first transceiver) or the base station (second transceiver). Among the tasks that the computer controller performs at either the base station or the mobile

unit is the assignment (indication) of time slots to avoid communications of data packets during interference (column 61, lines 23-42).

**With regard to claim 7**, West presents a method of TDMA communication in the presence of periodic interference. During data transmission, West detects (detecting) bursts of interference and proceeds to transmit data so as to avoid (synchronizing) the interference by reassigning time-slots (column 61, lines 15-42). After a burst of interference occurs, West determines whether or not the interference is periodic. In the event that the interference is periodic, time slots are assigned for communication such that they do not coincide with the expected interference bursts (column 61, lines 23-33, column 62, 23-47).

West does not disclose transmitting a redundant copy of the data packet on another time slot.

West, however, discloses redundant transmission (redundant copy) (column 22, lines 30-33). A person of ordinary skill in the art would have been motivated to transmitting a redundant copy of the data packet on another time slot so as to reduce transport delay (column 22, lines 30-33). At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to transmit a redundant copy of the data packet on the second time slot as described in claim 7.

**With regard to claim 8**, West discloses information that is transmitted in the form of data packets (data packet) (column 19, lines 12-14).

**With regard to claim 9**, West presents a computer controller that interfaces with the transceiver in either the mobile unit or the base station. Among the tasks that the computer controller performs at either the base station or the mobile unit is the assignment (assigning) of time slots to avoid communications of data packets during interference (column 61, lines 23-42).

**With regard to claim 10**, West discloses that the periodic interference source is a microwave (microwave) oven (column 61, lines 23-24).

9. Claims 11,12, 14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over West , line US005574979A) in view of Kasuya (US005436906A).

**With regard to claim 11**, West discloses connecting (connecting) a radio base station 4505 (base unit) to a 60Hz power main 4507 (AC power source) that also powers a periodic interference source 4501 (broadband interference source / segment B interferer). West detects (detecting) periodic interference (consistent timing of data packets received with errors) and proceeds to transmit data so as to avoid the interference by reassigning time-slots (enhanced mode) (column 61, lines 15-42). West also discloses wherein actively physically links between the base station and a portable handset (see FIG. 45, User terminal 4503) are assigned redundant transmission (see col. 61, line 15-42; see col. 22, line 5-16, 30-33; second/next assigned time slots) in addition to a primary timeslots (see col. 61, line 15-42; first assigned time slots) used for communication between the base unit and handset (see col. 62, line 14-18).

West does not explicitly disclose a redundant copy/time slot. However, assigning redundant time slots in addition to primary time slots are well known in the art. In particular, Kasuya teaches wherein active physical links between the base unit (see FIG. 10, Base) and a portable handset (see FIG. 10, portable) are assigned redundant time slots (see FIG. 10, second time slot with original data) in addition to primary timeslots (see FIG. 10, original/first time slot) used for communication between the base unit and handset (see col. 6, line 54-62; see col. 8, lines 36-62). Therefore, it would have been obvious to one having ordinary skill in the art at the



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time the invention was made to provide a redundant copy/time slot, as taught by Kasuya in the system of West, so that it would provide a system that compensates for deterioration of quality of signals received by a radio telecommunication system; see Kasuya col. 1, line 59 to col. 2, line 3.

**With regard to claim 12**, West discloses that in the event that interference is present, the device further determines whether or not the interference is periodic or simply sporadic. To determine if the interference is periodic, West compares (comparing) the timing (observing the time) of the increased signal strength and error rates (received in error) with that of a sync circuit connected to the AC power main (AC power source). If the errors coincide (determining) with the sync waveform, the interference is thought to be periodic (consistent timing of data packets received with errors) (column 62, lines 23-47). West detects periodic interference and proceeds to transmit data so as to avoid the interference by reassigning time-slots (enhanced mode) (column 61, lines 15-42).

**With regard to claim 14**, West detects periodic interference and proceeds to transmit data so as to avoid the interference by reassigning time-slots (column 61, lines 15-42). West utilizes two time-slots for communication in the presences of interference bursts. While communicating in one transmission time (first assigned time slot), communication resumes in a second transmission time (second time slot) after the interference abates (spacing ... greater than duration) (column 62, lines 14-18). When West recognizes that the interference is periodic, data is transmitted only at times when the interference is not expected to be present (column 61, lines 15-42).

Kasuya teaches wherein active physical links between the base unit (see FIG. 10, Base) and a portable handset (see FIG. 10, portable) are assigned redundant time slots (see FIG. 10,

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second time slot with original data) in addition to primary timeslots (see FIG. 10, original/first time slot) used for communication between the base unit and handset (see col. 6, line 54-62; see col. 8, lines 36-62). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a redundant copy/time slot, as taught by Kasuya in the system of West, so that it would provide a system that compensates for deterioration of quality of signals received by a radio telecommunication system; see Kasuya col. 1, line 59 to col. 2, line 3.

**With regard to claim 18**, the applicant and West disclose a method in which the periodic interference source is a microwave (microwave) oven (column 61, lines 23-24). Therefore, the radiation bursts would be about 7-9 msec.

10. Claims 31-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over West (US Patent 5,574,979) in view of Fridley et al (US Patent 6,229,432) in further view of Matouka (US Patent 3,697,787).

**With regard to claim 31**, West discloses a radio base station 4505 (base unit) that consists of a transceiver 4521 (transceiver), sync circuit 4511 and computer controller 4519 (microcontroller) as illustrated in figure 45. West detects (detecting) periodic interference (consistent timing of data packets received with errors) and proceeds to transmit data so as to avoid the interference by reassigning time-slots (enhanced mode) (column 61, lines 15-42). during data transmission, West detects bursts of interference and proceeds to transmit data so as to avoid the interference by reassigning time-slots (column 61, lines 15-42). West employs two time-slots for communication (transmitting the information) in the presences of interference

bursts (interference burst). While communicating in one transmission time (first assigned time slot), communication resumes in a second transmission time (second time slot) after the interference ends (column 62, lines 14-18).

West does not disclose transmitting a redundant copy of the data packet within the second time slot. West, however, discloses, redundant transmission (redundant copy) (column 22, lines 30-33). A person of ordinary skill in the art would have been motivated to transmit a redundant copy of the data packet on the second time slot so as to reduce transport delay (column 22, lines 30-33). At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art, to which the invention pertains to transmit a redundant copy of the data packet within the second time slot as described in claim 1.

West however does not expressly disclose a zero crossing detector as a part of the sync circuit 4511. Fridley et al discloses an intelligent transceiver module in which a zero crossing detector 56 (zero crossing detector) is coupled to microprocessor 30 (microcontroller) (Fridley, column 7, lines 55-59). A person of ordinary skill in the art would have been motivated to employ Fridley et al in West synchronize the output of the microprocessor 30 (Fridley, column 7, lines 55-59). At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine West and Fridley et al (collectively "West-Fridley").

West-Fridley does not expressly disclose a AC-to-AC converter. Matouka discloses a zero-crossing detector 60 (zero crossing detector) coupled to a synchronized cycloconverter 54 (AC-to-AC converter) (Matouka, column 4, lines 56-61). A person of ordinary skill in the art would have been motivated to employ Matouka in West-Fridley to regulate the conductive states

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of rectifiers in the cycloconverter 54 (AC-to-AC converter) (Matouka, column 4, lines. 62-65).

At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine West-Fridley and Matouka so as to obtain the invention as specified in claim 31.

**With regard to claim 32**, applicant describes the WDCT standard in the description of the prior art (page 3, lines 8-10). The use of a particular standard is a matter of choice.

**With regard to claim 33 and 34**, West discloses connecting a radio base station 4505 (base unit) to a 60Hz power main 4507 (AC power source) that also powers a periodic interference source 4501. West detects periodic interference (consistent timing of data packets received with errors/ segment B radiation) and proceeds to transmit data so as to avoid the interference by reassigning time-slots (enhanced mode) (column 61, lines 15-42).

#### ***Allowable Subject Matter***

11. Claims 13,15-17 and 36-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

12. Applicant's arguments filed 3/9/2005 have been fully considered but they are not persuasive.

**Regarding claims 1-10**, The applicant argued that, "...West does not disclose a redundant copy of data packet on the second time slot...applicant disagree and submit that

such motivation would not have been obvious at the time of invention was made because the context of West disclosure discourage use for redundant transmission in two way services...West suggests the redundant transmission may be performed for one way service, West does not make similar suggestion with respected to two way services such as **voice communication**...West would discourage not motivate...” in page 15, paragraph 4 and page 15, paragraph 1-2.

**In response to applicant's argument** that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., **voice communication**) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

**In response to applicant's argument, the examiner respectfully disagrees** with the argument above. West discloses redundant transmission (redundant copy or retransmission) (col. 22, line 1-16, 30-33; see col. 62, lines 14-18; see col. 28, line 40-44). Regarding one-way vs. two-way services in col. 22, lines 27-33, West is simply stating two way service are delay sensitive and one way service are “*good candidate for interleaving or other forms of redundant transmission...*” One way service is good candidate to “**other**” forms of redundant transmission since the “**primarily, first, one particular form**” of redundant transmission is already being a good candidate for two-way communication. As state in col. 22, lines 1-16, West discloses time division multiple access slot in voice communication (i.e. two way), and such system sending information **redundantly** over two or three intervals, so that it would improve reliability (see col. 22, line 15-16), respond to a periodic interference

signal by optician communication procedures (see col. 4, line 5-30), and reduce/minimize the transport delay in two-way communication (see col. 22, lines 27-33). Thus, it is clear that West clearly states motivational encouragement statement at various parts of his patents.

Moreover, sending a redundantly/copy information in second/separate time slot/channel duplex link is so well known in the art (see cited references below) for the purpose of (i.e. motivation) data/message recovery, improve reliability, reduce delay, or etc.

**Kasuya (US005436906A)** clearly states assigning a second time slot (see col. 6, line 54-63) of the time communication duplex link upon which a redundant of transmission is to be transmitted, and transmitting the redundant copy of the information within second time slot (also see FIG. 10, see col. 6, line 54-62; col. 8, line 36-63), with motivation of providing a system that compensates for deterioration of quality of signals received by a radio telecommunication system; see col. 1, line 59 to col. 2, line 3.

**Gammel (US4286334)** clearly states assigning a second time slot of the time communication duplex link upon which a redundant of transmission is to be transmitted, and transmitting the redundant copy of the information within second time slot (also see FIG. 3, see col. 3, line 43-68), with motivation of allowing the safeguard of data in communication transmission without the normally expected great increase in cost and without any fundamental additional time delay in transmission of intelligent; see col. 1, line 50-55.

**Davidson (US005345600A)** clearly states assigning a second time slot of the time communication duplex link upon which a redundant of transmission is to be transmitted, and transmitting the redundant copy of the information within second time slot (also see FIG. 23, see col. 3, line 28 to col. 4, line 30), with motivation of providing improved signal quality,

without additional hardware costs or unacceptable reductions in bandwidth efficiency; see col. 2, line 30-35.

**Regarding argument on claim 31 on page 17 and 18, please see the response above to claim 1.**

In view of the above, **the examiner respectfully disagrees** with applicant's argument and believes that West as set forth in the 103 rejections is proper, thus, Claims xx are obvious over West for at least the reasons discussed above.

### ***Conclusion***

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian N. Moore whose telephone number is 571-272-3085. The examiner can normally be reached on 9:00 AM- 6:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on 571-272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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